

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**



**AIR FORCE INSTRUCTION 11-246
VOLUME 6**

13 DECEMBER 2002

Flying Operations

**AIR FORCE AIRCRAFT DEMONSTRATIONS
(C-17, C-130, C-141, C/KC/NKC-135, UH-1)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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Certified by: HQ AMC/CC
(General John W. Handy)

Pages: 9

Distribution: F

This instruction implements guidance in AFPD 11-2, *Flight Rules and Procedures*; and AFI 11-209, *Air Force Participation in Aerial Events*. It provides guidance and procedures for Air Force performance of specific model, design, series (MDS) single-ship aircraft demonstrations and mission capabilities demonstrations. It designates Air Mobility Command as lead command for the C-5, C-9, C-12, C-17, C-20, C-21, C-22, C-32, C-37, C-38, C-130, C-141, E-4, KC-10, KC-135, C-135, NKC-135, UH-1, and VC-25 aircraft demonstrations. For the purpose of this instruction the Air National Guard is functionally considered to be a major command (MAJCOM). MAJCOMs, field operating agencies (FOA), and direct reporting units (DRU) may supplement this instruction. Forward one copy to HQ AMC/DOO and HQ USAF/XOOO after publication. See [Attachment 1](#) for a glossary of references and supporting information. Ensure all records created by this AFI are maintained and disposed of IAW AFMAN 37-139, "Records Disposition Schedule."

Chapter 1

GENERAL INFORMATION

1.1. INTRODUCTION. USAF uses aerial demonstrations to exhibit the capabilities of USAF aircraft. AMC is designated lead command and will establish criteria for aircraft capabilities demonstrations for C-5, C-9, C-12, C-17, C-20, C-21, C-22, C-32, C-37, C-38, C-130, C-141, E-4, KC-10, KC-135, C-135, NKC-135, UH-1, and VC-25 aircraft. MAJCOMs flying aircraft capabilities demonstrations with these MDS aircraft will comply with this instruction. The directives listed in [Attachment 1](#) provide further policy or procedural guidance in the conduct of these events. Flying procedures and guidance within this AFI do not constitute authority to deviate from AFI 11-209, *Air Force Participation in Aerial Events*, AFI 11-2MDS, Vol 1, *MDS Aircrew Training*, AFI 11-2MDS, Vol 3, *MDS Operations Procedures*, and AFI 11-202, Vol 3, *General Flight Rules*.

1.2. Terms Explained. Unless otherwise indicated, terms and definitions used in AFI 11-209, *Air Force Participation in Aerial Events*; AFI 35-101, *Public Affairs Policies and Procedures*; and this instruction are the same. For the purposes of this AFI, the terminology “aircraft capabilities demonstration,” “aircraft demonstration” and “aircraft capability exercise (CAPEX)” are used interchangeably. See [Attachment 1](#) for Terms.

1.3. Flyovers. AFI 11-209, *Air Force Participation in Aerial Events*, provides guidance for flyovers (including funeral/memorial flyovers and aerial reviews). - Additional guidance appears in AFI 11-2MDS, Vol 1, *MDS Aircrew Training*, AFI 11-2MDS, Vol 3, *MDS Operations Procedures*, AFI 11-202, Vol 3, *General Flight Rules*, and in MAJCOM directives. A flyover with the aircraft configured is not an aircraft capabilities demonstration.

1.4. Aircraft Capabilities Demonstrations. Aircraft capabilities demonstrations include the following: Assault Landing; Assault Takeoff; Personnel Airdrop; High Altitude Low Opening (HALO) Personnel Airdrop; Heavy Equipment Airdrop; Container Delivery System (CDS) Demonstration; Hovering Demonstration; and, the performance maneuvering of an aircraft in a runway environment. HQ AMC has developed aircraft capabilities demonstrations in the form of “standard profiles” for the following MDS aircraft, only: KC-135 (including C-135 & NKC-135), C-141, C-130, C-17 and UH-1. MAJCOMs operating these aircraft to perform aircraft capabilities demonstrations will adhere to the standard profiles in [Chapter 3](#).

1.5. Non-Standard Profiles. Aircrews desiring to fly a “one-time” aircraft capabilities demonstration differing from the standard profiles in [Chapter 3](#) must gain participation approval from their respective MAJCOM/CC (can be delegated to MAJCOM/DO) for the non-standard profile. In the approval request, explain why the standard profiles are not applicable and include sufficient information on the proposed non-standard profile to permit evaluation at the headquarters.

1.5.1. The information submitted to the MAJCOM headquarters will include a brief synopsis of what will take place and will address the following issues, at a minimum:

1.5.1.1. MDS aircraft (and number) and types of formations (similar/dissimilar), if applicable

1.5.1.2. Airspeeds and altitudes to be flown

1.5.1.3. Holding patterns, if applicable

1.5.1.4. Ground tracks to be flown (entry/demonstration/exit tracks)

1.5.1.5. Type of aircraft capabilities demonstration to be flown

1.5.1.6. Type of airdrop (personnel/heavy equipment/CDS—include airdrop intended point of impact relative to the crowd line and show line), if applicable

1.5.1.7. On-scene ground supervisor and on-scene communications and control procedures

1.5.1.8. Qualification and certification of the participating aircrew members in the maneuvers to be flown.

1.5.2. The authority delegated to MAJCOMS in paragraph 1.5., above, to approve non-standard profiles is intended to expedite the approval process for “one-time” aircraft capabilities demonstrations flown in unique situations. MAJCOMs will submit proposals to change the existing standard profiles, or to create entirely new profiles for aircraft capabilities demonstrations, to HQ AMC/DO for approval (OPR: AMC/DOOO, DSN 779-3516). Proposals should be approved at the MAJCOM before being submitted to HQ AMC/DO.

1.6. Waiver Authority. HQ USAF/XO delegates waiver authority for this instruction to HQ AMC/CC.

1.7. Recommendations for changes to this instruction should be submitted through appropriate MAJCOM channels to HQ AMC/DOO for final approval by AMC/CC.

Chapter 2

AIRCREW TRAINING, QUALIFICATION, CERTIFICATION & CRITIQUE

2.1. Requirements. AMC, AETC, ACC, AFRC, PACAF, USAFE, AFMC, AFSPC and ANG aircrews flying the MDS aircraft in paragraph 1.4. to perform aircraft demonstrations must be trained, qualified and certified in the maneuvers being flown. Aircrew performance during aircraft capabilities demonstrations flown at military or civilian events will be critiqued with results reported to the MAJCOM. RCS: HAF-XOO(AR)0212, continue reporting during emergency conditions, delayed precedence. Submit data requirements as prescribe, but may be delayed to allow the submission of higher precedence reports.

2.2. Training and Qualification. The standard profiles for aircraft capabilities demonstrations are compilations of basic flying maneuvers such as assault takeoff/landing, personnel/equipment airdrop, random steep approach, spiral up departure, closed traffic pattern, in flight refueling procedures, hovering procedures, aircraft backing procedures etc. AFI 11-2MDS, Volumes I, II and III fully documents these basic flying procedures and aircraft maneuvers—MAJCOMs will ensure all aircrew members who fly the standard profiles at approved events are trained and qualified in these basic flying procedures and aircraft maneuvers. Training and qualification will normally be accomplished at the wing level IAW applicable Air Force Instructions, MAJCOM Instructions and procedures, and Wing training and evaluation procedures. Guidance for aircrew training and qualification, in addition to the AFI 11-2MDS series of instructions, appears in AFI 11-202, Vol 1, *Aircrew Training*, and AFI 11-401, *Flight Management*.

2.3. MAJCOM Certification Process. MAJCOMs will delineate in a supplement to this AFI or other suitable publication, such as a concept of operations (CONOPS), the processes in place to certify their aircrews to fly the standard profiles, i.e., to certify their aircrews in the basic flying procedures and aircraft maneuvers constituting the approved aircraft capabilities demonstrations.

2.4. Participation Approval Procedures. AFI 11-209 and MAJCOM supplements describe the approval process for Air Force aerial participation in approved military and civilian events such as military open houses, civilian air shows, international air and trade shows, etc. All requests for participation approval to fly an aircraft capabilities demonstration in an approved event must flow through proper channels, must clearly specify the MDS and standard profile to be flown, and must warrant that the aircrew is qualified and certified in the maneuvers to be flown.

2.5. Critique and Review Process. MAJCOMs will implement procedures to critique the flying performances of their own aircrews participating in aircraft capabilities demonstrations flown at military and civilian events and to review the results at the appropriate headquarters level. The process will be documented in the MAJCOM supplement or CONOPS and will specify the criteria for the critique, the content guidelines and format for the critique results, the medium for communicating the results, and the headquarters level to which the results are to flow.

2.5.1. When the presence of an Aerial Control Team (ACT) is required by AFI 11-209 at a military or civilian event, the MAJCOM will coordinate with the ACT, arranging for the team chief to critique aircrew performance and forward results to the appropriate headquarters level.

2.5.2. If the ACT will not be present, the MAJCOM will coordinate with the event on-scene ground supervisor to perform the critique and forward results to the appropriate headquarters level.

2.5.3. If neither the ACT nor an on-scene ground supervisor are available, the MAJCOM will assign an additional pilot or navigator to the aircrew to perform an airborne critique and forward the results to the appropriate headquarters level.

Chapter 3

STANDARD PROFILES

3.1. Standard profiles for the KC-135, C-135, NKC-135, C-141, C-130, C-17 and UH-1 aircraft are published on the AMC Web Page: <https://amc.scott.af.mil/do/doo/dooo>. To proceed to the standard profiles, click on “AFI 11-246, Vol 6.” Two options will appear. Click on “Instruction” to view AFI 11-246, Vol 6. Click on “Standard Profiles” and the “MDS” options appear. Finally, click on the desired MDS and the standard profiles for that MDS will open. The profiles are based on the aircraft capabilities demonstrations listed in paragraph 1.4. and are compiled from basic flying maneuvers common to the MDS selected. The profiles by MDS are summarized here.

3.2. KC-135 Stratotanker (Includes C-135 and NKC-135). Profile 1 is an aircraft capabilities demonstration of approximately seven minutes duration. It begins with a take off to a VFR closed pattern followed by high-speed and low-speed passes and ends with a full stop at the same airfield.

3.3. C-141 Starlifter. Profile 1 is an aircraft capabilities demonstration that starts with the C-141 already airborne. The aircraft capabilities demonstrated follow in this sequence: personnel airdrop; airdrop escape; VFR overhead pattern; and, finally a full stop landing. Profile 2 is an aircraft capabilities demonstration that begins with a C-141 on the airfield. The aircraft capabilities demonstrated follow in this sequence: take off; spiral-up tactical departure; overhead VFR pattern; and, full stop recovery at the same airfield.

3.4. C-130 Hercules. Profile 1 is an aircraft capabilities demonstration that starts with a C-130 already airborne. The aircraft capabilities demonstrated follow in this sequence: personnel airdrop; random steep approach; assault landing; backing demonstration; and finally, assault takeoff. Profile 2 is an aircraft capabilities demonstration that starts with a C-130 assault takeoff. The aircraft capabilities demonstrated follow in this sequence: random shallow approach; assault landing; backing demonstration; engine running offload (ERO). Profile 3 is an aircraft capabilities demonstration starting with a C-130 already airborne. The aircraft capabilities demonstrated follow in this sequence: random shallow approach; assault landing; backing demonstration; ERO; and, assault takeoff.

3.5. C-17 Globemaster. Profiles 1, 2, and 3 are aircraft capabilities demonstrations involving the performance maneuvering of the aircraft in a runway environment, each with a different duration: 6, 10, and, 12 minutes, respectively. Profile 4 is an aircraft capabilities demonstration--a C-17 performs an airdrop, an overhead pattern to a simulated short-field landing and a maximum performance takeoff.

3.6. UH-1 Iroquois. Profile 1 is an aircraft capabilities demonstration highlighting a steep approach to landing, a hover demonstration and a tactical takeoff. Profile 2 is an aircraft capabilities demonstration presenting a tactical approach to a “quick stop” landing for an AIE followed by a tactical departure.

Profile 3 is an aircraft capabilities demonstration consisting of a fire suppression scenario involving the “Bambi Bucket.” Profile 4 is an aircraft capabilities demonstration involving a basic personnel airdrop.

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

The following references contain authorities for participation in aerial events:

DoD Directive 5410.18, *Community Relations*

DoD Instruction 5410.19, *Armed Forces Community Relations*

North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG) 3533

AFPD 11-2, *Aircraft Rules and Procedures*

AFI 11-2MDS, Vol 1, *MDS Aircrew Training*

AFI 11-202, Vol 3, *General Flight Rules*

AFI 11-209, *Air Force Participation in Aerial Events*

AFI 11-401, *Flight Management*

AFMAN 34-242, *Mortuary Affairs Program*

AFI 35-101, *Public Affairs Policies and Procedures*

DD Form 2535, *Request for Military Aerial Support*

Terms

Aerial Event—A military or civilian event, such as an open house, an air show, an air fair, an air and trade show, etc., that incorporates a significant level of aerial activity as part of its program.

Aerial Performance—The exhibition of an aircraft in flight. This generic phrase includes virtually every type of aerial participation in military or civilian events: flyover, aerial review, aerobatics, aircraft capabilities demonstration, assault landing/takeoff, aircraft weapons or tactics demonstration, in flight refueling demonstration, airdrop demonstrations of personnel or equipment, and the performance maneuvering of an aircraft.

Aerial Review—An aerial performance—flown in conjunction with a formal ceremony, such as a parade, a retirement ceremony for an authorized individual, etc.—consisting of a number of aircraft (i.e., elements) all over flying a specific point on the ground, a reviewing stand, for example. Participating aircraft are of multiple types, coming from the same Service, from more than one Service, or from other nations as well as the US. The flyover elements can be single ships or formations. The elements maintain trail formation and do not engage in precision maneuvers—in essence, the aircraft are “passing in review.” Spacing between elements is less than one minute.

Aerial Demonstration—See Aircraft Capabilities Demonstration, below.

Aircraft Demonstration—See Aircraft Capabilities Demonstration, below.

Aircraft Capabilities Demonstration—An aerial performance in which an aircraft conducts maneuvers usually associated with its employment and which are common to the airframe being shown. The purpose is to illustrate the unique flying capabilities of the aircraft. Includes Aerobatics, Assault Landing/Takeoff,

Aircraft Weapons or Tactics Demonstration, In Flight Refueling Demonstration, Airdrop Demonstrations of Personnel and Equipment, Hovering Demonstration, and the performance maneuvering of an aircraft in a runway environment. Used interchangeably with the phrases “aerial demonstration” and “aircraft demonstration.” Also referred to as a Capabilities Exercise (CAPEX).

Aircraft Weapons or Tactics Demonstration—An aircraft capabilities demonstration employing, or simulating the employment of, munitions, weapons, or combat tactics. May include use of ground-based pyrotechnics for effect.

Assault Landing Demonstration—An aircraft capabilities demonstration illustrating a technique used for landing on short runways. The aircraft is flown at a speed slightly above aircraft stall speed at a steeper than normal approach path. After touchdown, maximum engine reverse thrust and braking are applied to stop the aircraft.

Assault Takeoff Demonstration—An aircraft capabilities demonstration illustrating a takeoff technique used for departing short runways employing maximum takeoff power and climb rate for the aircraft. Also referred to as “Maximum Performance Takeoff” or “Maximum Effort Takeoff.”

Container Delivery System (CDS) Demonstration—An aircraft capabilities demonstration involving the airdrop of supplies or equipment packaged in individual web containers of canvas and nylon. Individual containers can be airdropped in a variety of situations: high-velocity, low-velocity, or HALO. Double containers are dropped in low-velocity situations. CDS airdrop is initiated by gravity extraction.

Equipment Airdrop Demonstration—An aircraft capabilities demonstration illustrating the airdrop of equipment on platforms rigged with parachutes, in individual containers rigged with parachutes, or in small door bundles rigged with parachutes.

Flyover—An aerial performance consisting of a straight and level flight by a single aircraft or by a single formation (up to four aircraft of the same type and Service) over a fixed point. Flyovers do not involve aerobatics; however, bank angles of up to 30 degrees may be used to maneuver to, or from, the flyover ground track and to improve the visibility of the aircraft to the spectators. A flyover can be performed with the aircraft in a clean configuration or with the aircraft configured (e.g., partially configured, or fully configured). An example of partial configuration is a KC-135 with only the boom deployed; full configuration would be the same aircraft with the gear, flaps and boom all deployed.

Funeral Flyover or Memorial Flyover—An aerial performance consisting of a single-pass flyover at a funeral service or memorial service, respectively, by a single aircraft or by a single formation (up to four aircraft). The formation may be flown as a missing-man formation, with the appropriate approval.

High Altitude Low Opening (HALO) Airdrop Demonstration—An aircraft capabilities demonstration involving the airdrop of a precision parachute demonstration team, such as the Air Force STARS, the Wings of Blue or the Golden Knights, from an altitude of 3,000 feet AGL, or higher. The parachutists free fall to a predetermined altitude before deploying their parachutes to complete the descent. An aircraft used to airdrop personnel in support of a military or civilian event is referred to as a jump platform.